

Michelle R. Koutnik

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| CONTACT INFORMATION | Earth and Space Sciences University of Washington Box 351310 Seattle, WA 98195 USA | <i>Voice:</i> (206) 221-5041 <i>Fax:</i> (206) 543-0489 <i>E-mail:</i> mkoutnik@uw.edu <i>Web:</i> www.michelle-koutnik.com |
| RESEARCH INTERESTS | Glacier and ice-sheet dynamics; ice masses on Mars; interpretation of ice-penetrating radar data; ice-flow modeling and geophysical inverse methods to understand ice and climate histories | |
| EDUCATION | Ph.D., Geophysics , <i>University of Washington, Seattle</i> | Nov 2009 |
| | B.S. Astrophysics, minor Geophysics , <i>University of California, Los Angeles</i> | July 2001 |
| EMPLOYMENT | Research Assistant Professor , <i>University of Washington</i> | June 2013 - present |
| | Research Associate , <i>University of Washington</i> | Dec 2012 - May 2013 |
| | Postdoctoral Fellow , <i>University of Copenhagen, Denmark</i> | Jan 2010 - Nov 2012 |
| | Research and Teaching Assistant , <i>University of Washington</i> | Sept 2002 - Nov 2009 |
| | Visiting Appointment in Planetary Science , <i>California Institute of Technology</i> | 2001 - 2008 |
| PROFESSIONAL OFFICES/ AWARDS | Fulbright Arctic Program U.S. Scholar Grant to Iceland (3 month stay in 2018) | 2017 |
| | American-Scandinavian Foundation research award for research in Iceland | 2018 |
| | National Science Foundation International Research Fellowship (postdoc funding) | 2009 |
| | David A. Johnston Award for graduate research, Univ. of Washington | 2006 |
| | National Science Foundation Graduate Research Fellowship | 2004 |
| | David Bonderman International Travel Fellowship | 2003 |
| | Fulbright Fellowship, US-Canada program | 2001-2002 |
| PROFESSIONAL SERVICE AND ENGAGEMENT | Scientific editor, <i>Journal of Glaciology</i> , 2017 - 2019 | |
| | International Glaciological Society (IGS) meeting 2019 on Radio Glaciology, scientific steering committee member | |
| | Reviewer for <i>Geophysical Research Letters</i> , <i>Icarus</i> , <i>Journal of Geophysical Research</i> , <i>Journal of Glaciology</i> , <i>Annals of Glaciology</i> , <i>Mars Journal</i> , <i>Quaternary Research</i> , <i>Earth Surface Dynamics</i> , <i>The Cryosphere</i> , <i>Nature</i> ; Panelist for NSF (2014) and NASA (2014; 2015); Ad-hoc reviewer for NSF (2015; 2016; 2017) and NASA (2015; 2016; 2017) | |
| | Shadow editor, <i>The Cryosphere</i> , special issue following 2016 International Program in Ice Core Science (IPICS) meeting | |
| | Member, International Glaciological Society | |
| | Member, American Geophysical Union | |

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| UW SERVICE AND ENGAGEMENT | Member, Earth and Space Sciences Executive Committee | September 2017 - present |
| | Member, Scan Design Fellows Advisory Committee | 2016 - present |
| | Invited lecturer and participant, Program on Climate Change Summer Institute | September 2016 |
| | Invited keynote speaker, Earth and Space Sciences commencement | June 2016 |
| | Member, University of Washington Mountain to Sea Initiative | 2015 - present |
| | University of Washington College of the Environment Diversity Committee | Jan 2015 - Oct 2017 |
| | University of Washington Faculty Field Tour | June 2015 |
| | Member, Earth and Space Sciences annual awards committee | 2014 |
| | Earth and Space Sciences Annual Gala judge | 2014 - 2016 |
| INVITED TALKS | <i>Water ice is water ice: some applications and limitations of Earth analogues to Mars</i> American Geophysical Union Fall meeting, December 2017 | |
| | <i>Holocene accumulation and ice flow near the West Antarctic Ice Sheet Divide ice-core site</i> IPICS meeting, Hobart, Tasmania March 2016 | |
| | <i>Unraveling climate and ice-flow histories across the interior of Antarctica and Greenland</i> University of Oregon, Eugene, February 2016 | |
| | <i>1) Imprint of climate and ice flow on ice sheets; 2) Effect of ice-divide migration on ice-core records</i> University of Washington, April 2013 | |
| | <i>Inferring histories of accumulation, ice thickness and ice-divide position</i> British Antarctic Survey, Cambridge, October 2010 | |
| | <i>Inferring histories of accumulation rate, ice thickness, and ice flow from ice-sheet internal layers</i> Centre for Ice and Climate, University of Copenhagen, May 2010 | |
| | <i>Using ice topography and internal layers to infer past ice-flow rates and past mass balance on Mars</i> University of Texas Institute for Geophysics, Austin, February 2010 | |
| | <i>Fifty years at Blue Glacier and South Cascade Glacier</i> with Al Rasmussen, University of Washington Climate Impacts Group, May 2007 | |
| | Invited guest speaker , Danish Club of Seattle annual event, 24 September 2017 | |
| | Invited guest speaker , Ecological Society of America field trip to Mt. Rainier, 6 August 2017 | |
| Invited panelist and speaker , International Partnership in Ice Core Sciences (IPICS) Early Career Workshop, Hobart Tasmania, March 2016 | | |
| Interviews for popular media , multiple inquiries each year regarding work in Antarctica and on Pacific Northwest glaciers | | |
| Public lecture , with Howard Conway, "Blue Glacier: Past, Present, and Future", Olympic National Park lecture series, 14 April 2015 | | |
| Guest speaker , Undergraduate field study course at Mt. Rainier National Park (August 2014 and August 2015) and Olympic National Park (September 2016) Partners in the Park program, led by University of Washington | | |
| Invited Participant , Science communication training, 23-24 Oct 2014, Hosted by University of | | |

Washington College of the Environment

Research mentor, High School student summer intern June-Sept 2014
Student funded through Seattle's Pacific Science Center *Discovery Corps* program

Volunteer, Seattle's annual Polar Science Weekend (2013-present)

Lectures and visits to high-school and junior-high classrooms, multiple talks per year

Blog entries, documenting field work as well as research and resources in glaciology

GRADUATE STUDENT ADVISING AND ENGAGEMENT (TOTAL=17; CURRENT=11) Ben Hills (PhD 2023; Committee member); Andrew Hoffman (PhD 2023; Committee member); Annika Horlings (PhD 2022; Committee member); Brita Horlings (PhD 2022; Committee member); Emma Kahle (PhD 2020; Committee member); John Christian (PhD 2020; Co-advisor); Alexander Huth (PhD 2020; Committee member); Laura Kehrl (PhD 2019; Committee member); David Lillien (PhD 2019; Committee member); Trevor Hillebrand (PhD 2018; Committee member); Christopher Max Stevens (PhD 2018; Committee member); Jon Bapst (PhD 2018; Committee member); Ethan Kruse (PhD 2018; UW Astronomy; Graduate School Representative); Jade Cooley (MS 2017 Central Washington University; Committee member); Kristin Poinar (PhD 2015; Committee member); Chris Frans (PhD 2015; Graduate School Representative); Lisbeth Nielsen (host for research-study abroad from University of Copenhagen, Sept-Dec 2014)

UNDERGRAD / HIGH-SCHOOL STUDENTS Co-mentored Aerin Basehart (Summer Undergraduate Research Program (SURP) 2017), Logan Krehbiel and Alex Yanello (2017); co-mentored Alex Le (SURP 2015, 2016); Chaja Levy (2014)

POSTDOCS Collaboration with Nick Holschuh (2017 - present)

FIELDWORK ACTIVITY **Langjokull, Iceland** June 2017

- Part of 5-person team to conduct radar surveys and collect shallow ice cores

Mt. Rainier, Washington Summer 2015, 2016

- Day trips to survey debris-covered termini of Nisqually and Emmons Glaciers

South Pole, Antarctica Dec 2015-Jan 2016

- Two-person team with Howard Conway, installed 40 stakes and surveyed them with GPS in catchment upstream of SPICE core site; first season of four in this project

Ross ice shelf near Beardmore Glacier, Antarctica Nov 2013-Jan 2014

- Part of a five-person field team (including Howard Conway and Paul Winberry); Collected ground-based radar data and conducted active and passive seismic experiments

Beardmore Glacier, Antarctica Oct-Dec 2012

- Part of a five-person field team (including Howard Conway and Paul Winberry); Collected ground and airborne radar data and conducted active and passive seismic experiments

Central West Antarctica Nov-Dec 2011

- Part of five-person field team on 500 km snow machine traverse, similar to 2010 campaign

Greenland, NEEM ice-core site May-June 2011

- Ice-core processing of deep ice; assisted drilling a new 400-meter ice core at the NEEM camp

Central West Antarctica Nov-Dec 2010

- Part of team led by Lora Koenig (NASA) and Summer Rupper (Brigham Young University); Drilled shallow ice cores and collected radar data on a traverse across West Antarctic Divide

Zermatt, Switzerland May 2010

- Part of team led by Summer Rupper (Brigham Young University); Collected radar data, survey, drilled shallow ice cores on Zwillings Glacier

Blue Glacier, Olympic Mountains, Washington summer trips in 2002-2008; 2014

- Collaborated with Howard Conway and Al Rasmussen; Collected and processed GPS data, installed and maintained temperature and snow-depth sensors

Ilulissat, West Greenland October 2007

- Assisted Ginny Catania (Univ. of Texas, Austin); Retrieved GPS units

Dry Valleys, Antarctica Nov 2004-Feb 2005

- Part of team led by Erin Pettit (Univ. of Alaska, Fairbanks) to study Taylor Glacier

Haig Glacier, Canada winter trip 2001, spring and summer trips 2002

- Part of team led by Shawn Marshall (Univ. of Calgary); Mass-balance measurements, snow-pit analysis, and weather-station installation and maintenance

TEACHING
ACTIVITY

Organizer and instructor, Exploration Seminar to Greenland and Denmark (ESS 402 / ARCTIC 387), UW Study Abroad Program; 15 August - 10 September 2018 for 15 undergraduate students

Instructor, Sea-level rise: State of science and societal implications (Honors 221C); University of Washington Honors Program; Winter 2018

Co-instructor, with Knut Christianson and Ed Waddington I join and help to coordinate the primarily student-led glaciology group reading seminars (ESS 595C); Spring 2014 - present

Co-instructor, 'The natural variability of glaciers' (ESS 590; Fall 2015), Led by Gerard Roe and Jamie Shulmeister (Univ. Queensland)

Guest lecturer, 'Ice on Mars' (ESS 495; Spring 2014); 'Glacier transients' (ESS 431; Fall 2014; Fall 2015); 'Glacier change' (ESS 203; Winter 2016); 'Changes in the Greenland Ice Sheet' (JSIS 582; Fall 2013), *University of Washington*

Instructor, Workshop on Applications of Radar Data, *Copenhagen* 12-16 March 2012

Guest lecturer, 'Ice-sheet modeling', *Copenhagen* 2 May 2011; 20 April 2012

Co-instructor, Exploration Seminar to Greenland, *Univ. Washington* 12 Aug-2 Sept 2008

- Developed new study-abroad undergraduate course with a focus on ice, climate, and culture of Greenland, and travel to Greenland; Co-instructed with Gerard Roe

ADDITIONAL
ACTIVITY

Invited participant, Keck Institute for Space Studies workshop on Climate record within Mars' Polar Layered Deposits, Caltech 28 November - 1 December 2017

Course participant, Advanced Climate Dynamics Course, Norway 8-19 June 2010
On the topic of Marine/Ice Sheet Interactions

Invited participant, Workshop on Mars Polar Ice and Climate, Switzerland October 2008

GRANTS AWARDED
AS PI OR CO-PI

10. American-Scandinavian Foundation support for field expenses in Iceland, PI: Michelle Koutnik, \$5,000. 5/15/2018-8/15/2018.

9. University of Washington Innovation Award: Building a digital glacier time machine: Reconstructing past landscapes to help understand the future of water in the western U.S., PI: David Shean, Co-PI: Knut Christianson and Michelle Koutnik, \$299,959, 3/2018 - 3/2020.

8. Fulbright Arctic Program, U.S. Scholar Grant to Iceland for 3-month exchange 5/1/2018-8/1/2018.
7. NSF Division of Polar Programs Antarctic Glaciology: Holocene deglaciation of the Western Ross Embayment: Constraints from East Antarctic Outlet Glaciers, PI: Michelle Koutnik (UW), Co-I: Howard Conway (UW), Ben Smith (UW-APL), \$335,195. 6/1/2016 - 5/31/2019.
6. Scan Design Foundation: "Apprehending changes in the Greenland Ice Sheet through exploration and education"; PI Michelle Koutnik, \$52,500 to offset student course fees (at \$3500 per student) for new exploration seminar to Denmark and Greenland
5. NSF Arctic Natural Sciences: Unraveling the history of the Greenland Ice Sheet from its internal radiostratigraphy; PI: Michelle Koutnik, Co-I: Knut Christianson (UW); \$284,093. 9/1/2015 - 8/31/2018. Additional \$23,231 in CAREER supplement.
4. NSF Office of Polar Programs Antarctic Glaciology: Collaborative Research: Crary Ice Rise Revisited; PI: Howard Conway, Co-PI: Michelle Koutnik, Paul Winberry (Central Washington University); \$482,289. 5/1/2015 - 4/30/2018.
3. NSF Office of Polar Programs Antarctic Glaciology: Collaborative Research: Characterization of upstream ice and firn dynamics affecting the South Pole Ice Core (SPICE); PI: Michelle Koutnik, Co-PI: E. Waddington and H. Conway (UW); \$760,233. 9/1/2015 - 8/30/2020.
2. NASA Solar System Workings: Investigating the causes of radar-detected layering in ice; PI: Lynn Carter (NASA), Co-I: Lora Koenig, Michelle Koutnik, Zoe Courville, Rebecca Ghent; \$58,273 (UW subcontract). 8/1/2015 - 7/31/2018 + 1-year extension.
1. NASA Solar System Workings: Application of Glacial Flow Models to Mars; PI: Michelle Koutnik, Co-I: Asmin Pathare (Planetary Science Institute), Ed Waddington (UW); \$383,547. 7/25/2015 - 7/24/2018 + 1-year extension.

GRANTS AS
COLLABORATOR

1. Awarded from NASA Mars Data Analysis Program: "Glacial flow of Martian Lobate Debris Aprons"; PI: Asmin Pathare. 4/2015 - 4/2018.
2. Danish Institute for Study Abroad Project Application for student research and education, PI: Susanne Buchardt, Collaborators: Sune Rasmussen (Centre for Ice and Climate, Copenhagen), Michelle Koutnik (UW)

GRANTS PENDING
AS PI, CO-PI,
COLLABORATOR

1. NSF Antarctic Glaciology: Signatures of past ice flow near the Western Divide between the Ross Sea and Amundsen Sea Sectors, PI: Howard Conway, Co-PI: Michelle Koutnik, \$596,238. 7/1/2018 - 6/30/2021

PEER-REVIEWED
PUBLICATIONS

- Christian, J.E., **M.R. Koutnik**, and G. Roe. *Journal of Glaciology* (In revision). Committed retreat: controls on glacier disequilibrium in a warming climate.
- Christian, J.E., N. Siler, **M.R. Koutnik**, and G. Roe. 2016. Identifying dynamically induced variability in glacier mass-balance records. *Journal of Climate* 29 (24), 8915-8929.
- Cuffey, K.M., G.D. Clow, E.J. Steig, C. Buizert, T.J. Fudge, **M.R. Koutnik**, E.D. Waddington, R.B. Alley, and J.P. Severinghaus. 2016. Deglacial temperature history of West Antarctica, Proceedings of the National Academy of Sciences 113 (50), 14249-14254.

- Koutnik, M.R.**, T.J. Fudge, H. Conway, E. Waddington, T. Neumann, K. Cuffey, C. Buizert, and K. Taylor. 2016. Holocene accumulation and ice flow near the West Antarctic Ice Sheet Divide ice-core site. *Journal of Geophysical Research* 121, 907-924.
- Fudge, T.J., B. Markle, K. Cuffey, C. Buizert, K. Taylor, E. Steig, E. Waddington, H. Conway, and **M.R. Koutnik**. 2016. Variable relationship between accumulation and temperature in West Antarctica for the past 31,000 years. *Geophysical Research Letters* 43, 3795-3803.
- Rupper, S., W. R. Christensen, B. R. Bickmore, L. Burgener, L. S. Koenig, **M.R. Koutnik**, C. Miege, R. Forster. 2015. The effects of dating uncertainties on net accumulation estimates from firn cores. *Journal of Glaciology* 61 (225), 163-172.
- Koutnik, M.R.** 2014. "Softened Craters", entry in *Encyclopedia of Planetary Landforms*, Springer. Editors: H. Hargitai and A. Kereszturi.
- NEEM Community Members (including **M.R. Koutnik**). 2013. Eemian interglacial reconstructed from a Greenland folded NEEM ice core strata. *Nature* 493, 489-494.
- Burgener, L., S. Rupper, L. Koenig, R. Forster, W. Christensen, J. Williams, **M.R. Koutnik**, C. Miege, E. Steig. 2013. An observed negative trend in West Antarctic accumulation rates from 1975 to 2010: evidence from new observed and simulated records. *Journal of Geophysical Research* 118, doi:10.1002/jgrd.50362.
- Koutnik, M.R.**, E.D. Waddington, D.P. Winebrenner, and A.V. Pathare. 2013. Response timescales for Martian ice masses and implications for ice flow on Mars. *Icarus* 225, 949-959.
- McBride, J., S. Rupper, S. Ritter, D. Tingey, **M.R. Koutnik**, A. Quick, T. Morris, R. Keach, II, L. Burgener, A. McKean, J. Williams, J. Maurer, D. Keeler, R. Windell. 2012. Relationship between wave ogives and radar scattering in an alpine glacier. *Geosphere* 8 (5), 1054-1077.
- Koutnik, M.R.** and E.D. Waddington. 2012. Well-posed boundary conditions for limited-domain models of transient ice flow near an ice divide. *Journal of Glaciology* 58 (211), 1008-1020.
- Steen-Larsen, H.C., E.D. Waddington, and **M.R. Koutnik**. 2010. Formulating an inverse problem to infer the accumulation-rate pattern from deep internal layering in an ice sheet using a Monte-Carlo Approach. *Journal of Glaciology* 56 (196), 318-332.
- Koutnik, M.R.**, E.D. Waddington, and D.P. Winebrenner. 2009. A method to infer past surface mass balance and topography from internal layers in Martian Polar Layered Deposits. *Icarus* 204, 458-470.
- MacGregor, J.A., K. Matsuoka, **M.R. Koutnik**, E.D. Waddington, M. Studinger, and D.P. Winebrenner. 2009. Mapping millennially averaged accumulation rates for the Lake Vostok region using deep internal layers and inverse methods. *Annals of Glaciology* 50 (51), 25-34.
- Fishbaugh, K.E., C.S. Hvidberg, D. Beaty, S. Clifford, A. Haldermann, J.W. Head, M. Hecht, **M.R. Koutnik**, and K. Tanaka. 2008. Introduction to the 4th Mars Polar Science and Exploration Conference Special Issue: Five top questions in Mars Polar Science. *Icarus* 196, 305-317.
- Winebrenner, D.P., **M.R. Koutnik**, E.D. Waddington, A.V. Pathare, B.C. Murray, S. Byrne, J.L. Bamber. 2008. Evidence for ice flow prior to trough formation in the Martian North Polar Layered Deposits. *Icarus* 195, 90-105.
- Waddington, E.D., T.A. Neumann, **M.R. Koutnik**, H.P. Marshall, D.L. Morse. 2007. Inference of

accumulation-rate patterns from deep internal layers. *Journal of Glaciology* 53, 694-712.

Marshall, S. and **M.R. Koutnik**. 2006. Ice sheet action versus reaction: Distinguishing between Heinrich events and Dansgaard-Oeschger cycles in the North Atlantic. *Paleoceanography* 21, doi:10.1029/2005PA001247.

Koutnik, M.R., S. Byrne, B. Murray, A. Toigo, and Z. Crawford, 2005. Eolian controlled modification of the martian south polar layered deposits. *Icarus* 174, 490-501.

Koutnik, M.R., S. Byrne, and B. Murray, 2002. The South Polar Layered Deposits of Mars: The Cratering Record. *Journal of Geophysical Research*, 107 (E11), 5100-5112.

Murray, B., **M.R. Koutnik**, S. Byrne, L. Soderblom, K. Herkenhoff, and K. Tanaka, 2002. Preliminary Geological Assessment of the Northern Edge of Ultimi Lobe, Martian South Polar Layered Deposits. *Icarus* 154, 80-97.

NON-REFERREED
PUBLICATIONS

Stevens, C.M., H. Conway, P. Kennard, L.A. Rasmussen, and **M.R. Koutnik**. 2016. Glacier retreat, outburst floods, and kinematic waves: Nisqually Glacier changes related to Climate. National Park Service Report.

PAPERS IN
PREPARATION

J. Cooley, P. Winberry, **M.R. Koutnik**, and H. Conway. In preparation. Tidal and structural controls on flow speed and seismicity near the grounding line of the Beardmore Glacier, Antarctica.

D.A. Lilien, T.J. Fudge, **M.R. Koutnik**, H. Conway, E. Osterberg, D.G. Ferris, E.D. Waddington, and C.M. Stevens. In preparation. Holocene ice-flow speedup in the vicinity of South Pole.

T. Hillebrand and others (including M.R. Koutnik). In preparation. Holocene thinning and grounding-line retreat of the Darwin-Hatherton glacier system, Antarctica.

M.R. Koutnik and others. In preparation. Diagnosing uncertainty in applications of flowline models to Transantarctic Mountain outlet glaciers: Study of Beardmore Glacier.

SELECT ABSTRACTS
OF UNPUBLISHED
WORK

Winberry, P., A. Huerta, H. Conway, S. Anandakrishnan, R. Aster, **M.R. Koutnik**, A. Nyblade, and D. Wiens. 2018. Repeating glacial earthquakes, interacting sticky-spots, and subglacial conditions. European Geophysical Union, Vienna, Austria.

M.R. Koutnik, A.V. Pathare, E.D. Waddington, and D.P. Winebrenner. 2017. Water ice is water ice: some applications and limitations of Earth analogues to Mars. American Geophysical Union meeting, New Orleans, LA.

Christian, J.E., **M.R. Koutnik**, and G. Roe. 2017. Estimating glacier response times and disequilibrium in a changing climate. American Geophysical Union meeting, New Orleans, LA.

M.R. Koutnik, H. Conway, E. Waddington, T.J. Fudge, M. Stevens, D. Lilien, B. Hawley, E. Osterberg, D. Clemens-Sewall, D. Ferris, and M. Albert. 2017. Characterization of upstream ice and firn dynamics affecting SPICEcore. South Pole Ice Core Workshop, Seattle, WA.

Hillebrand, T., **M.R. Koutnik**, C. King, J. Stone, B. Hall, H. Conway, B. Goehring, M. Gillespie, and B. Smith. 2017. Holocene grounding-line retreat and deglaciation of Darwin and Hatherton Glaciers, Antarctica. West Antarctic Ice Sheet Workshop, Camp Casey, WA.

Conway, H., T. Hillebrand, J.P. Winberry, C. Martin, **M.R. Koutnik**, and R.A. Hindmarsh. 2017. The grounding and formation of Cray Ice Rise. West Antarctic Ice Sheet Workshop, Camp Casey,

WA.

Winberry, J.P., H. Conway, **M.R. Koutnik**, and C. Martin. 2017. Geologic Controls and Ongoing Evolution of the Crary Ice Rise. West Antarctic Ice Sheet Workshop, Camp Casey, WA.

Das, I., **M.R. Koutnik**, T. Creyts, and R. Buck. 2017. Characterizing unconformal layers in ice and their impact on ice flow. International Glaciological Society meeting, Boulder, CO.

Stevens, C.M., H. Conway, L.A. Rasmussen, and **M.R. Koutnik**. 2017. Modeling Nisqually Glacier surface-elevation and length changes using a mass-balance record derived from reanalysis and weather-station data. Geological Society of America, Seattle, WA.

Krehbiel, L. C. Todd, and **M.R. Koutnik**. 2017. Assessing the risk of glacial outburst floods from Emmons Glacier, Mt. Rainier, WA. Geological Society of America, Seattle, WA.

Basehart, A., S. Altenberger, C. Todd, and **M.R. Koutnik**. 2017. Mapping supraglacial debris on Emmons Glacier, Mt. Rainier, WA. Geological Society of America, Seattle, WA.

Hillebrand, T., **M.R. Koutnik**, H. Conway, J. Stone, C. King, B. Hall, B. Smith, and M. Gillespie. 2017. Delayed Deglaciation of Darwin Glacier, Antarctica. Past Antarctic Ice Sheet Dynamics (PAIS) conference, September 2017, Trieste, Italy.

Koutnik, M.R., A.V. Pathare, E.D. Waddington, C.E. Todd, and J.E. Christian. 2017. Applications of ice-flow models to Mars. Lunar and Planetary Science Conference, Woodlands, TX.

Martin, C., T. Hillebrand, H. Conway, P. Winberry, **M.R. Koutnik**, H. Corr, K. Nicholls, C. Stewart, J. Kingslake, and A. Brisbane. 2016. Radar polarimetry at Crary Ice Rise, Antarctica, reveals details of ice-flow reorganization over the last millennium. European Geophysical Union meeting.

Carter, L.M., L.S. Koenig, Z.R. Courville, R.R. Ghent, and **M.R. Koutnik**. 2016. Radar detection and layering in ice: Laboratory experiments of a constructed ice sheet. American Geophysical Union meeting, San Francisco, CA.

Kintner, P.M., D.P. Winebrenner, and **M.R. Koutnik**. 2016. Ice-sheet temperature around subglacial Lake Vostok constrained by new flowband modeling. American Geophysical Union meeting, San Francisco, CA.

Cooley, J., P. Winberry, H. Conway, and **M.R. Koutnik**. 2016. Oceanic forcing and seismic events near the grounding line of Beardmore Glacier, Antarctica. West Antarctic Ice Sheet Workshop.

Koutnik, M.R., A.V. Pathare, C. Todd, E. Waddington, and J.E. Christian. 2016. Applying knowledge from terrestrial debris-covered glaciers to constrain the evolution of martian debris-covered ice. Mars Polar Science and Exploration meeting, Reykjavik, Iceland.

Koutnik, M.R., A.V. Pathare, C. Todd, and E.D. Waddington. 2016. Influence of debris cover on glacier-surface evolution. Lunar and Planetary Science Conference, Woodlands, Texas.

Pathare, A.V., D.C. Berman, D.A. Crown, E. Joseph, F.C. Chuang, and **M.R. Koutnik**. 2016. Glacial flow time scales of Martian lobate debris aprons in Eastern Hellas. Lunar and Planetary Science Conference, Woodlands, Texas.

Kintner, P., D.P. Winebrenner, **M.R. Koutnik**, K. Matsuoka, J.A. MacGregor. 2016. Estimating oxygen flux into subglacial Lake Vostok, Antarctica, using the relationship between temperature

and englacial radar attenuation. Lunar and Planetary Science Conference, Woodlands, Texas.

Koutnik, M.R., H. Conway, T. Hillebrand, J. Stone, P. Spector, B. Hall, and C. King. 2015. Assimilating geochronological data into ice-flow models to constrain the deglaciation of Transantarctic mountain glaciers. WAIS Workshop, Colorado.

Conway, H., R.C.A. Hindmarsh, **M.R. Koutnik**, C. Stevens, and J.P. Winberry. 2014. Flow of ice near a large melt channel in the Ross Ice Shelf. American Geophysical Union meeting, San Francisco, California.

Koutnik, M.R., E.D. Waddington, H. Conway. 2014. Response of interior ice to changes near the ice-sheet margin. International Glaciology Society meeting, Chamonix, France.

Koutnik, M.R., T.J. Fudge, E.D. Waddington, H. Conway, and J. Lundin. 2013. Constraints on the WAIS Divide thinning function from ice-flow modeling. WAIS Divide ice core science meeting, San Diego, California.

Winebrenner, D., A. Pathare, E. Waddington, **M.R. Koutnik**. 2012. Flow modeling of Gemina Lingula with slope-dependent ablation reproduces near-surface radar stratigraphy. American Geophysical Union, San Francisco, California.

Lundin, J., E. Waddington, **M.R. Koutnik**, H. Conway. 2012. Self-consistent model of ice-sheet evolution and paleoclimate. International Program on Ice Core Science meeting, Giens, France.

M.R. Koutnik, E. Waddington, T.J. Fudge, T. Neumann, H. Conway, S. Rasmussen, D. Dahl-Jensen. 2012. Effect of climate and ice-flow transients on ice-divide position and ice-core records. European Geophysical Union meeting, Vienna, Austria.

M.R. Koutnik, T. Neumann, E. Waddington, H. Conway, T.J. Fudge. 2011. Effects of 2-D ice flow on the WAIS Divide ice-core site. WAIS Divide ice core science meeting, San Diego, California.

Koutnik, M.R., E.D. Waddington, T.A. Neumann, S. Price, H. Conway, and K. Matsuoka. May 2011. Using radar layers to infer ice temperature and to interpret basal conditions across the West Antarctic Ice Sheet Divide. European Geophysical Union, Vienna, Austria.

Winebrenner, D.P., **M.R. Koutnik**, E.D. Waddington, A.V. Pathare, S. Byrne, B.C. Murray. December 2008. Spatially resolved information on ice dynamics from topography on the Martian Polar Layered Deposits. American Geophysical Union, San Francisco, California.

Todd, C.E., E.D. Waddington, **M.R. Koutnik**, H. Conway, and J. Stone. December 2006. Reconstructing the glacial retreat history of Reedy Glacier, Antarctica, using inverse methods and surface exposure age data. American Geophysical Union, San Francisco, California.

Pathare, A., **M.R. Koutnik**, B. Murray, and S. Marshall. October 2006. Glacial Flow Modeling of the Martian North Polar Layered Deposits. 4th International Conference on Mars Polar Science, Davos, Switzerland.

Koutnik, M.R., R. Sletten, B. Hallet, and S. Marshall. August 2006. Subglacial Permafrost Evolution and the History of Ice Cover on the Tibetan Plateau. First Asian Conference on Permafrost, Langzhou, China.

Koutnik, M.R. and S. Marshall. December 2002. Modelling Subglacial Permafrost Evolution. American Geophysical Union, San Francisco, California.